INTRODUCTION TO THE NATIONAL ENERGY TECHNOLOGY LABORATORY

The National Energy Technology Laboratory (NETL) is a U.S. Department of Energy (DOE) national laboratory that produces technological solutions to America's energy challenges. The laboratory focuses on finding tools and processes that simultaneously address the three overarching issues that characterize today's energy situation in the United States: energy affordability, supply security, and environmental quality.

NETL has three research laboratories that span the Nation. Laboratories in Pittsburgh, Pa., and Morgantown, W.Va., conduct a broad range of research and development (R&D) to increase the supply of traditional energy resources, improve the efficiency and environmental performance of thermoelectric power generation, and help end-users to conserve energy. Researchers at the NETL laboratory in Albany, Ore., focus on developing advanced materials for use in the energy industry. NETL also has small offices in Tulsa, Okla., and Fairbanks, Alaska, that address challenges unique to those energy-rich regions. All five locations support DOE's mission to advance the national, economic, and energy security of the United States.

As the only national laboratory owned and operated by DOE, NETL is unique in how it conducts business and in the relationships it forms with industry, academia, research organizations, and other national laboratories. First and foremost, the laboratory conducts cutting-edge R&D on site. About one quarter of NETL's 1,200 Federal and contractor employees are engaged in research with industry, government, and academic partners to solve problems that would otherwise become barriers to commercializing advanced power systems, fuels, and environmental and waste-management technologies. NETL obtains basic and fundamental research through collaboration with universities and through its competitively selected site-support contracts; this work supplements the applied research performed by NETL's Federal scientist and engineers.

In addition to performing research on site, NETL applies its extensive technology- and project-management capabilities to shape, fund, and manage research that is conducted throughout the United States and in more than 40 foreign countries. The laboratory's research portfolio includes more than 1,300 projects, with a total award value of nearly $11 billion and private sector cost-sharing of nearly $6 billion. To secure these projects, NETL uses a variety of contracting arrangements with corporations, small businesses, universities, non-profit organizations, and other national laboratories and government agencies.

NETL also provides strategic information and analysis to the policymakers responsible for providing direction and funds to ensure that America has a continuing supply of clean, affordable energy. NETL provides (1) expert scientific and engineering analysis of technology options, developmental pathways, energy scenarios, and technical advancements; (2) programmatic and socio-economic impact analysis and benefits appraisals; (3) expert simulation and modeling using state-of-the-art systems; and (4) analysis of energy systems infrastructure interdependencies, including policy implications.

NETL is a proactive supporter of educational initiatives at all levels. NETL funds nearly 500 R&D projects at U.S. universities to advance energy science and technology and to provide a trained workforce for the energy industry of the future. NETL's outreach efforts also include a speakers' bureau, visiting professor program, Adopt-a-School program, high school science bowls, in-school demonstrations, computer donations to area schools, job shadowing for high school students, and other initiatives that encourage careers in science and engineering. NETL expects the same level of educational support from its contractors and looks for organizations that meet or exceed those expectations by forming partnerships and teaming with universities.

It is expected that NETL's site-support contractors will provide world-class expertise in disciplines related to research and technology, business and economics, the environment, education, and energy markets to achieve highly credible results and performance. NETL strives for perfection and expects the same from its collaborators and site-support contractors.

NETL's organization structure comprises seven areas of interest:

- **Strategic Center for Natural Gas and Oil** (SCNGO) integrates all elements of DOE's natural gas and oil research. SCNGO is charged with implementing science and technology development to resolve the environmental, supply, and reliability constraints of producing and using oil and gas resources—resources that account for more than 60 percent of the energy consumed in the United States. With core competencies and expertise in all aspects of natural gas and oil, SCNGO investigates and manages R&D leading to improved natural gas and oil production and use. SCNGO invests in projects that promise tangible benefits to the American people, including a cleaner environment and increased domestic natural gas and oil production. SCNGO organizational chart [PDF-13KB]

- **Strategic Center for Coal** (SCC) works to ensure national energy security and economic prosperity through production of clean, affordable electricity and fuels from coal, the Nation's most abundant energy resource. SCC is charged with implementing research, development, and demonstration to resolve the environmental, supply, and reliability constraints of producing and using coal resources. Technologies that allow the environmentally responsible use of coal will allow the United States to meet growing electricity demand and will lay the foundation for a sustainable hydrogen economy. SCC organizational chart [PDF-17KB]

- **Office of Systems, Analyses and Planning** (OSAP) conducts studies of complex, large systems—such as industrial or ecological processes—and the interactions among those systems, including social, economic, political, regulatory, technological, design, and management institutions. The complex nature of these subjects requires an interdisciplinary approach. System studies provide input to decisions on issues such as national plans and programs, resource use and environmental and energy security policies, and deployment of energy technology. System studies are also used to support planning exercises at various organizational levels. OSAP organization chart [PDF-14KB]

- **Project Management Center** (PMC) harnesses expertise and talent for non-fossil-energy research, development, and demonstration projects, including those with other Federal organizations such as the Office of Electricity Delivery and Energy Reliability, the Department of Homeland Security, and the Office of Energy Efficiency and Renewable Energy. PMC performs overall management and implementation of these customers' advanced initiatives, providing technical expertise, analytical tools, and a full suite of implementation skills. PMC organization chart [PDF-17KB]

- **Office of Research and Development** (ORD) performs basic and applied R&D in fossil energy and environmental science. Building on NETL's historic strengths and competencies, ORD focuses on four research topics recognized as important issues for the 21st century:
  - ***Computational and Basic Sciences*** leads to tools that enable more rapid and efficient scale-up of new sub-systems, devices and components, to enable more cost effective demonstration of new technologies.
  - ***Energy System Dynamics*** focuses on development of technologies for clean, efficient, fuel flexible power generation, including advanced gas turbines and fuel cells, hybrid systems, gasification systems (coal and biomass), and CO2 capture technologies.
  - ***Geological and Environmental Systems*** focuses on the minimization and abatement of environmental problems associated with the development and use of fossil fuels.
  - ***Materials Science*** specializes in life-cycle research of most metals, alloys, and ceramics, and the recycling and remediation of waste streams associated with these processes.

  ORD organization chart [PDF-29KB]

- **Office of Institutional and Business Operations** (OIBO) plans, directs, and coordinates administrative, operational, construction, and staff support activities for NETL. OIBO's responsibilities include—
  - Organization and human resource management.
  - The laboratory's Chief Financial Officer function.
  - Budgetary and financial analyses and administration.
  - Information technology management, maintenance, and implementation.
  - Execution of NETL's environment, safety, and health program, including compliance and remediation.
  - Acquisition and assistance services.
  - Site management, including design, construction, operation, and maintenance of NETL facilities.
  - Security services.
  - Real and personal property management. OIBO organization chart [PDF-30KB]

- **The Office of Crosscutting Functions** (OCF) plans, directs, and coordinates policy, administrative, and site-support contract management activities that crosscut laboratory activities. The office provides policy direction for the Federal project management

function, performance measurement, security services, and site-support contract management. Particular functional and technical analysts participate individually or with teams to ensure timely information exchange, and to coordinate responses to action items affecting DOE. OCF organization chart [PDF-18KB]

Figure 1 below shows FY2008 NETL budget information indicating the levels of funding received by NETL from several DOE and non-DOE program offices and consequently reflects the work efforts provided by NETL personnel to execute program and project activities.

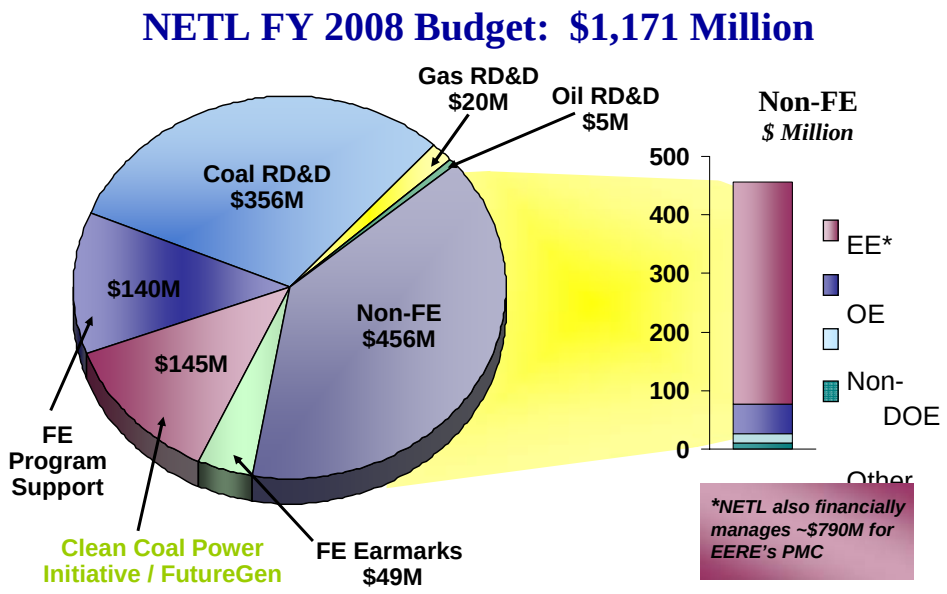

Figure 1. NETL Budget for FY2008